

AMENDMENTS TO THE SPECIFICATION

Please amend the second paragraph on page 21, beginning at line 14:

The digital data output from each of the modulators 401 are provided to the RF transmitter network 411 for RF processing and transmission. In particular, the RF transmitter network 411 maps the data into code words, converts the code words into a waveform, and modulates the waveform to an Intermediate Frequency (IF), such as between 30MHz and 60MHz. The IF signal is then upconverted to any one of several 6 MHz channels within the applicable frequency range (550-860 MHz for the consumer broadcast television embodiment) by an up-converter. In one embodiment, ~~two stages~~ one stage of up-conversion and a second stage of down-conversion are used to achieve an aggregate up conversion of the input signal to RF transmitter network 411 at the desired signal-to-noise levels at the output of RF transmitter network 411. The upconverted signal is amplified and equalized for transmission over the TX RF link. The RF transmitter network 411 performs RF aggregation and provides the ability to operate anywhere within the applicable downstream frequency range based on software configuration. The RF transmitter network 411 outputs an RF signal, at 550-860 MHz in a preferred embodiment, that incorporates the combined information from each of the modulators 401.

Please amend the second paragraph on page 23, beginning at line 31:

The radio frequency signals RF1 and RF2 are provided to respective inputs of a 2:1 combiner 513, which combines the signals into a single combined RF signal CRF asserted via a corresponding transmitter RF link as previously described. The bandwidth filters 507A and 507B are also referred to as image reject filters used to isolate and forward a selected sideband image of the mixed signal and filter out the LO signal and any other undesired images. In one embodiment, the bandwidth filters 507A and 507B are centered around the difference between the center frequencies of the respective CMC 1-4 or CMC5-8 signals and the ULO signal (e.g., ULO -- CMC1-4 or ULO -- CMC5-8). The combiner 513 shown is a 2:1 combiner since it combines the two radio frequency signals RF 1 and RF2 into the CRF signal. It is noted that although only two RF signals are shown, the combiner 513 or any other suitable combiner may be employed to combine any appropriate number of RF^X signals depending upon the needs of the particular configuration, where "X" is an integer number denoting the respective radio

frequency signals. In the embodiment shown, as further described below, the frequencies of the ULO and DLOX signals are selected so that further filtering of the RFX signals is rendered unnecessary. For example, the frequency of the DLOX signals are sufficiently high, and the difference between each DLOX signal and the ULO signal is sufficiently large, so that isolation of the carrier and positive image frequencies is unnecessary. Of course, further filtering is contemplated if necessary in particular configurations. ~~In other words, combiner 513 operates in a manner similar to bandwidth filters 507A and 507B by performing as an image rejection filter when the input signals are at the high end of their frequency bandwidth so that the carrier and positive image frequencies of RFX are isolated and are not output from combiner 513 at CRF. Therefore, only the negative image frequencies are output from combiner 513 at CRF.~~

Please amend the second paragraph on page 26 at line 27, and on page 27 at line 4:

The frequency range of the DLOX signals are chosen to be sufficiently high so that the corresponding RFX signals need not be further filtered prior to combination by the combiner 513. ~~In other words, DLOX signals are chosen to be at a frequency sufficiently high so that combiner's 513 inherent band pass filtering function eliminates the positive image and carrier frequencies of RF1 and RF2, leaving the negative image frequencies to be combined and output as CRF.~~ In one embodiment, the DLOX signals are in the 1-2 GHz range, such as approximately 1.6 GHz in a specific embodiment. For 6 MHz channel widths and four channels per block, the frequencies of the DLOX signals are separated by at least 24 MHz, and preferably by 50 MHz to avoid interference or overlap of the block channel RF signals. For example, the frequencies of the DLOX signals may be selected among frequencies of 1.60 GHz, 1.65 GHz, 1.70 GHz, 1.75 GHz, etc. The synthesizers 511 may be configured to be adjustable within a selected frequency range in a continuous or discrete manner. In one embodiment, each of the synthesizers 511A, 511B has a phase noise spectrum of at least 95 dBc at 10 kilohertz (kHz) off-center, where "dBc" refers to decibels (dB) related to the carrier frequency. ~~The isolated negative image frequency is centered around the difference between the DLOX frequency and the corresponding IF signal FIF2 frequency.~~ In one specific embodiment, where the center frequency of FIF1/FIF2 is 902.5 MHz and where the DLOX signal is approximately 1.6 GHz, the output signal CRF is centered around the filtered negative image frequency of 697.5 MHz (with the network providing additional filtering of the higher frequencies). As can be seen, mixers 509A and 509B operate in

combination with the inherent bandpass of combiner 513 to generate a down converter functionality within the second stage of RF transmitter network 411. Thus, overall, RF transmitter network 411 provides a up conversion of input signals M1-M8 transmitted in a preferred embodiment at center frequencies between 15 and 57 MHz, respectively, to an output from RF transmitter network 411 at CRF within the applicable frequency range of 550-860 MHz in one preferred embodiment. Within RF transmitter network 411 mixers 503A and 503B, up-converter synthesizer 505 and bandwidth filters 507A and 507B, and amplifiers 515 comprise an up-converter stage 520 of RF transmitter network 411. Down converter mixers 509A and 509B, down converter synthesizers 511A and 511B and combiner 513 comprise a down-converter stage 522 of RF transmitter network 411. Up-converter stage 520 up converts the input signals CMCI-8 from 15-57 MHz to the output signals FIF1/FIF2 at 890.5-914.5 MHz in one embodiment. Down converter stage 522 down converts input signals FIF1/FIF2 at 890.5-914.5 MHz to the output signal CRF at 550-860 MHz in one preferred embodiment.